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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BONG-GI KIM

Appeal 2008-0869
Application 10/076,075
Technology Center 2600

Oral Hearing Held: May 14, 2008

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and ROBERT E. NAPPI, Administrative Patent Judges

ON BEHALF OF THE APPELLANT:

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The above-entitled matter came on for hearing on Wednesday, May 14, 2008, commencing at 9:00 a.m., at The U.S. Patent and Trademark Office, 600 Dulany Street, Alexandria, Virginia before Timothy J. Atkinson, Jr., Notary Public.

MS. BOBO-ALLEN: Calendar No. 15, Appeal No. 2008-0869. Mr. Daebeler.

JUDGE HAIRSTON: Okay. Thank you.

MS. BOBO-ALLEN: Um-hum.

JUDGE HAIRSTON: Do you mind spelling your name for the record?

MR. DAEBELER: Yes, D as -- D-A-E-B-E-L-E-R.

JUDGE HAIRSTON: Okay, thank you. You may begin, I'm sorry.

MR. DAEBELER: Okay, great. My name is Paul Daebeler, and I'm representing the applicant, Mr. Kim. In this case the, the claims that are rejected are claims 1 -- 3 through, 3 through 15, 17, and 18 under Section 103A, as being inpatentable over U.S. Patent No. 6,392,977 issued to Ando, et al., in view of U.S. Patent No. 5,659,531 issued to Ono, et al., and the admitted prior art which includes figure 1 and paragraphs 3 through 9 of the specification.

I was going to begin the presentation by -- the argument by discussing the admitted prior art and the present invention. In the admitted prior art, there is a dual wavelength laser diode. This is used in CD players and DVD players as examples. They create lights that -- light rays that hit a grating that then are -- impact a beam splitter and these -- this -- these light rays are reflected onto, onto a recording medium. Light rays are reflected back through the beam splitter. They also are incidental on a holographic element and through a concave lens and then also onto a photo detector. The reason -- the problem with this configuration or the enhancement that we're trying to achieve is that the, the hologram optical element being separate

from a beam splitter adds another component making the manufacturing of this type of device more cumbersome, also less reliable, because if there's exposed to heat, then what happens is there may be some -- the bonding that occurs may be impacted, and it may shift the components after substantial use for the -- in the CD system, because you want -- this is a very precise configuration in order that the rays precisely hit the photo detector for error tracking.

So in our device, which is figure 2 of the present application, what's happened is the -- one of the substantial improvements is to create a new beam splitter which includes a hologram element, excuse me, which -- where the beam splitter includes a hologram surface as well as a reflecting surface. So the claim -- I'm going to direct you now to the claim language itself. Figure -- all the independent claims have a beam splitter, so in Claim 1, for example, the claim language reads "A beam splitter disposed on an optical path between the objective lens and the photo detector, beam splitter having a first surface to reflect the light beam and the second light beam toward the objective lens and simultaneously transmitting the first light beam and second light beam, and a second surface on which a hologram is formed to compensate for a deviation between optical axes of the first and second light beams transmitted through the first surface."

The reason why this deviation occurred is because you have a separation of the light beams. Items -- they would be items 53 and 55 in figure 2, separated by I think 1 or 10 micrometers as an example in the specification, and what they're doing is they're reflecting and -- off of the first surface 31 onto the recording medium. Light rays are then reflected from the light recording medium, transmitted through the first surface. Then

there is a hologram section on second surface in order to correct this -- correct any abnormality, and then they hit the photo detector for error tracking.

Now in the prior art, moving to the prior art, the Ando reference is the one reference that's used. That is -- I'm going to point reference figure 1 here which is what the Examiner referred to during prosecution. In figure 1, they do have a dichroic hologram in the figure. However, that is separate from the beam splitter which is item 7. So 8 is a dichroic hologram, and also in this case, the Examiner did note during prosecution that Ando did not disclose the same type of beam splitter as we have disclosed in our invention.

So what the Examiner did was he applied Ono, and that would be figure 11A is what he referred to, and he was referring to the hologram element 216 in figure 11A in order to combine these two to come up with the present invention, with, excuse me, the claimed subject matter.

Now in figure 11A, you will notice that the semiconductor laser 210 and also the reflections that occur from the optical disk, all these are reflecting off the second surface which has the hologram element 216. However, in our claim language, as we have indicated in claim 1, we have called for a beam splitter disposed on an optical path between the object lens and the photo detector, the beam splitter having first surface to reflect the first light beam and the second light beam toward the objective lens and simultaneously transmitting the first light beam and the second light beam and the second surface on which a hologram is formed to compensate for the deviation between optical axis of first and second light beams transmitted through the first surface. So there is a transmission through the first surface

and a reflection occurring on the first surface, and this does not show this in figure 11A --

JUDGE SAADAT: Counsel --

MR. DAEBELER: -- and so that's, that's one of the arguments that we were making.

JUDGE SAADAT: If you continue with disclosure of Ono --

MR. DAEBELER: Yes.

JUDGE SAADAT: -- figure 15 is another embodiment that defers from figure 11A in the fact that the detectors are positioned at a different location than the laser source.

MR. DAEBELER: Okay.

JUDGE SAADAT: So it seems like the surfaces, whether they are transmitting or reflecting, pretty much depend on the positioning of detectors and the laser source, and in one embodiment, they're both on one side, which is shown in figure 11A. In another embodiment, they're at different locations which is shown in figure 15.

MR. DAEBELER: Yeah, in figure 15, let me refer to the -- moment to the specification. In this case, the, the difference here is that if you tried to combine the two, if you tried to combine figure 1 with this particular item, figure 1 of Ando, et al., shows that the configuration is for two optical disks, 2A and 2B, and this configuration, if you took this piece, this 218, and placed it into and substituted for the beam splitter, etc., it wouldn't work, because it's not correcting the optical axes. In other words, one of the items in there, in the claim language, was to correct the optical axes, and this does not indicate here in, in Ono, et al., I do not believe it indicates that there is a correction of the optical axes.

JUDGE SAADAT: But wasn't that the purpose of Ono? I refer you to column 2, lines 45 through 47. There, there is a reference to detecting focusing error signals and tracking error signals in the optical head.

MR. DAEBELER: Yes, but there isn't an indication, for example, there are two photo sensors. If you -- there's one, one light stream coming from figure 16. There aren't the two as -- whereas in our case, in figure 2, as an example, items 53 and 55 show a dual wavelength laser diode. In other words, two different light sources coming from the same unit. So in our -- I believe in our claim language, we indicate a first light source to generate a first light beam, a second light source to generate a second light beam. That isn't occurring in the, in the Ono reference. In the drawing you referred to, figure 16, there is only one light source. So they wouldn't be necessarily correcting for the optical -- for the difference in that optical axis. I think -- can you refer again to that column number of the specification again you're referring to?

JUDGE SAADAT: Sure. Description of figure 15 or the other teaching about focusing error?

MR. DAEBELER: Column, column 2.

JUDGE SAADAT: Okay, column 2, starting from around line 45.

MR. DAEBELER: Line 45.

JUDGE SAADAT: Probably a couple --

MR. DAEBELER: Right.

JUDGE SAADAT: -- lines before that.

MR. DAEBELER: Okay, it is for the purpose of, of the tracking error signals but doesn't say that it's correcting the optical axes, because there is not a first light source and a second light source in this particular figure.

JUDGE SAADAT: But it mentions that the diffraction grating is used for or at least relates to the diffraction directions.

MR. DAEBELER: Oh, well, the diffraction grating does, you know, split maybe one light, one light source, okay, but what we have is two separate light sources with, with the two separate wavelengths in our particular embodiment.

Now the claim language says a first light source to generate a first light beam, a second light source to generate a second light beam whose optical axis is parallel to the optical axis of the first light beam, the second light source being disposed optically farther from a recording medium than the first light source. That doesn't appear in figure 16 --

JUDGE SAADAT: That was in Ando.

MR. DAEBELER: Huh?

JUDGE SAADAT: The Examiner relied on Ando and prior art to show that.

MR. DAEBELER: Right, they relied on Ando to show that, but then there's not an articulated reason to combine the two, because, because even if you add this one into the system in Ando, suppose you add 218 into the system of Ando, what items are you going to replace? It appears you would try to replace the dichroic hologram 8 with a beam splitter 7 with this device. But Ando's objective is to, is -- because it has two different optical disks of two different densities, their objective is a different objective, and this device will probably not produce that -- achieve that particular objective of, of handling the two different densities. That's probably why they have a system which is -- uses the, the photo detector configuration that they have.

So in their system, they say an optical pickup device -- in their abstract an optical pickup device that is able to record, reproduce information signals for first and second optical disks with different recording capacities. That's not a tracking error. These are -- I mean that configuration, if you place that in, 218 in that specific location, what will happen is, is you will -- the hologram will be formed, you know, towards the optical disk 2A and 2B and not towards the photo detector, or if you try to invert it the other way, I don't believe the reflection patterns would, would work out correctly, because if we put 218 and configured it -- if we put the -- excuse me. I apologize. If we put 219 which is the photo -- the holographic element towards 2A and 2B in that configuration, we would not be headed towards, let's see, 260 and 214. 214 is the optical disk, so we would be -- the configuration I guess would have to come in that way where you have 218 --

JUDGE SAADAT: I don't think we should be concerned about the specific positioning of these components, because depending on where they are, the angles could be adjusted, and that's within the ordinary skill in the art knowledge and expertise, and what prompts me to think twice is your figure 3 of the application.

MR. DAEBELER: Okay.

JUDGE SAADAT: And isn't that showing that the grating is, is correcting the focusing of these two light beams?

MR. DAEBELER: Right. It's -- what it's doing, it's correcting for the fact that you had two different optical axes that you started out with. Then it's reflected off the disk, off the recording medium, and reflected back through the, through the device, through the, the holographic element.

JUDGE SAADAT: Um-hum.

MR. DAEBELER: Okay, through the beam splitter, okay, and then what they're correcting for is the fact that the optical axes may, may be off, because you are trying to have the photo detector pick up the correct signal so it can track it --

JUDGE SAADAT: Isn't that the same as focusing?

MR. DAEBELER: Well, it's a tracking error signal. That's what the specification refers to as a tracking error signal.

Okay, and so if we tried to place this device, as I said, into this location in, in Ando, it would not be able -- it would not achieve the same result because you're -- in Ando you are referring to two optical disks, and you're relying on the fact their problem they're trying to solve is different densities of the optical disks. So that's why it seemed that one having ordinary skill in the art would not have used this device.

In addition, as I pointed out before, figure 15 does not show the two light sources. So I think the beam splitter plus its location are part of the invention, because you are trying to achieve a certain objective of trying to obtain, you know, a system where you can have appropriate tracking error signal, and that's what we're arguing.

JUDGE SAADAT: Okay.

JUDGE HAIRSTON: Okay, any other questions?

JUDGE SAADAT: No.

JUDGE HAIRSTON: Any questions?

JUDGE NAPPI: No.

JUDGE HAIRSTON: Thank you.

JUDGE NAPPI: Thank you.

MR. DAEBELER: Thank you very much. I appreciate your time.

(Whereupon, the hearing concluded on May 14, 2008.)